

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A computer network, the computer network including a plurality of managed sites, wherein each of the managed sites comprises:
  - a. at least one manager engine computer coupled to a plurality of managed nodes, the at least one manager engine computer including a management software component, the management software component being capable of retrieving and storing data representative of network system state information, the network system state information comprising relationships among a plurality of managed network elements, wherein at least one of the plurality of managed network elements corresponds to one of the plurality of managed nodes, and wherein the plurality of managed network elements comprise at least one physical element and at least one of ~~a~~ software application, and a software subroutine, ~~a service, and data~~; and
  - b. at least one client computer coupled to the at least one manager engine computer, the at least one client computer including a data retrieval software component, the data retrieval software component being capable of retrieving the data representative of network system state information from the at least one manager engine computer and of presenting the data representative of network system state information to a user.
2. (Original) The computer network of claim 1 wherein the data representative of network system state information is stored in a database on the at least one manager engine computer, the data base comprising data representing information about the plurality of managed network elements, the information about the plurality of network elements including, for each element of the plurality of managed network elements, an element type, possible parents of the element, a corresponding assigned manager engine computer for the element, a corresponding command list, if any, for the element, any security restrictions for the managed element and information relating the element to others of the plurality of managed network elements.
3. (Original) The computer network of claim 1 wherein the data retrieval software component includes a snap-in application.

4. (Original) The computer network of claim 1 wherein the relationships among the plurality of managed network elements include one-way relationships.

5. (Original) The computer network of claim 1 wherein the relationships among the plurality of managed network elements include two way relationships.

6. (Original) The computer network of claim 1 wherein the data retrieval software component includes a user interface software component, the user interface software component presenting the data representative of network state information to the user by representing each of the plurality of managed network elements with a corresponding icon and by representing the relationships among the plurality of managed network elements with corresponding connectors visibly connecting icons.

7. (Withdrawn) A manager engine computer coupled to a plurality of managed nodes located in one of a plurality of managed sites comprising a network, the manager engine computer communicating with the plurality of managed nodes and storing data representative of network state information in a relational database, the network state information being organized as a series of relationships among managed elements of the network, the data representative of network state information comprising:

- a. a managed element table, the managed element table comprising data about managed elements of the network;
- b. a managed element relationship table, the managed element relationship table comprising data about possible relationships among the managed elements of the network; and
- c. a managed element type table, the managed element type table comprising data representative of type information for the managed elements of the network.

8. (Withdrawn) The manager engine computer of claim 7 wherein the relational database further comprises stored data representative of network characteristic information, the data representative of network characteristic information including a message class table, the message class table comprising data representative of the class of messages used in connection with the manager engine computer communicating with the plurality of managed nodes.

9. (Withdrawn) The manager engine computer of claim 8 wherein the data representative of network characteristic information further comprises a security role table,

the security role table comprising data representative of levels of security access for users of the network.

10. (Withdrawn) A computer readable storage medium having stored thereon data representative of network state information, the network state information being organized as a series of tables in a relational database, the relational database comprising:

a. a managed element table, the managed element table comprising data about managed elements of the network;

b. a managed element relationship table, the managed element relationship table comprising data about possible relationships among the managed elements of the network; and

c. a managed element type table, the managed element type table comprising data representative of type information for the managed elements of the network.

11. (Withdrawn) The computer readable storage medium of claim 10 wherein the relational database further comprises a message class table, the message class table comprising data representative of a class of messages used in connection with a manager engine computer communicating with a plurality of manage nodes in a managed site of the network.

12. (Withdrawn) The computer readable storage medium of claim 11 wherein the relational database further comprises a security role table, the security role table comprising data representative of levels of security access for users of the network.

13. (Withdrawn) A method for maintaining a site master designation for one of a plurality of manager engine computers coupled to one another in one of a plurality of managed sites comprising a network, said plurality of manager engine computers each maintaining state information about a corresponding connected group of managed node computers, the method comprising performing the following steps at each of the plurality manager engine computers that are operational:

a. checking continuously whether one of the plurality of manager engine computers has entered an off line state;

b. in the event that one of the plurality of manager engine computers has entered an off line state, determining whether the one of the plurality of manager engine computers is assigned a site manager designation and, if so:

- i. generating a first random number identifier;
- ii. comparing the first random number identifier to other random number identifiers generated by other of the plurality of manager engine computers; and
- iii. self assigning a site master designation in the event the first random number identifier is greater than the other random number identifiers.

14. (Withdrawn) A method for maintaining a site master designation for one of a plurality of manager engine computers coupled to one another in one of a plurality of managed sites comprising a network, said plurality of manager engine computers each maintaining state information about a corresponding connected group of managed node computers, the method comprising performing the following steps at each of the plurality of manager engine computers that are operational:

- a. checking continuously whether one of the plurality of manager engine computers has entered an off line state;
- b. in the event that one of the plurality of manager engine computers has entered an off line state, determining whether the one of the plurality of manager engine computers is assigned a site manager designation and, if so:
  - i. generating a first random number identifier;
  - ii. comparing the first random number identifier to other random number identifiers generated by other of the plurality of manager engine computers; and
  - iii. self assigning a site master designation in the event the first random number identifier is less than the other random number identifiers.

15. (Withdrawn) A method for initiating and maintaining a site master designation for one of a plurality of manager engine computers coupled to one another in one of a plurality of managed sites comprising a network, said plurality of manager engine computers each maintaining state information about a corresponding connected group of managed node computers, the method comprising:

- a. assigning a first one of the plurality of manager engine computers a site master designation;

b. determining at a second one of the plurality of manager engine computers whether the first one of the plurality of manager engine computers has entered an off line state, and, if so, performing the following at the second one of the plurality of manager engine computers:

- i. generating a first random number identifier;
- ii. comparing the first random number identifier to other random number identifiers generated by ones of the plurality of manager engine computers other than the second one of the plurality of manager engine computers; and
- iii. self assigning a site master designation in the event the first random number identifier is greater than the other random number identifiers.

16. (Withdrawn) A method for initiating and maintaining a site master designation for one of a plurality of manager engine computers coupled to one another in one of a plurality of managed sites comprising a network, said plurality of manager engine computers each maintaining state information about a corresponding connected group of managed node computers, the method comprising:

a. assigning a first one of the plurality of manager engine computers a site master designation;

b. determining at a second one of the plurality of manager engine computers whether the first one of the plurality of manager engine computers has entered an off line state, and, if so, performing the following at the second one of the plurality of manager engine computers:

- i. generating a first random number identifier;
- ii. comparing the first random number identifier to other random number identifiers generated by ones of the plurality of manager engine computers other than the second one of the plurality of manager engine computers; and
- iii. self assigning a site master designation in the event the first random number identifier is less than the other random number identifiers.

17. (Withdrawn) A method for initiating and maintaining a site master designation for one of a plurality of manager engine computers coupled to one another in one of a plurality of managed sites comprising a network, said plurality of manager engine

computers each maintaining state information about a corresponding connected group of managed node computers, the method comprising:

a. assigning a first one of the plurality of manager engine computers a site master designation; and

b. determining whether the first one of the plurality of manager engine computers has entered an off line state, and, if so, randomly assigning a site master designation to a second one of the plurality of manager engine computers.

18. (Withdrawn) A computer network, the computer network including a plurality of managed sites, wherein each of the managed sites comprises:

a. at least one manager engine computer coupled to a plurality of managed nodes, the at least one manager engine computer including

i. a management software component, the management software component being capable of retrieving and storing data representative of network system state information, the network system state information comprising relationships among a plurality of managed network elements, wherein at least one of the plurality of managed network elements corresponds to one of the plurality of managed nodes; and

ii. an audit software component, the audit software component being capable of storing in a log file data representative of audit information about applications running on the plurality of managed nodes; and

b. at least one client computer coupled to the at least one manager engine computer, the at least one client computer including a data retrieval software component, the data retrieval software component being capable of retrieving the data representative of network system state information and audit information from the at least one manager engine computer and of presenting the data representative of network system state information and audit information to a user.

19. (Withdrawn) The computer network of claim 18 wherein the audit software component further includes an audit information producer component and an audit information consumer component, the audit information producer component retrieving stored data in the log file and placing it in a shared buffer comprised of two queues, the audit information consumer component retrieving data from the shared buffer in response to requests communicated from the data retrieval software component on the at least one client

computer, wherein the audit information consumer component operates in a manner that is asynchronous relative to operation of the audit information producer component.

20. (Withdrawn) The computer network of claim 19 wherein operation of the audit information consumer component comprises continuously alternating among retrieving data from a first of the two queues while the audit information producer component places log file data in the second of the two queues and retrieving data from the second of the two queues while the audit information producer component places log file data in the first of the two queues.

21. (Previously Presented) The computer network of claim 6 wherein the user interface software component features drill down capability.

22. (Previously Presented) The computer network of claim 6 wherein the icons convey property information.

23. (Previously Presented) The computer network of claim 6 wherein the icons include actions icons which facilitate user initiation of actions.

24. (Previously Presented) The computer network of claim 6 wherein the plurality of managed network elements include base managed network elements.

25. (Previously Presented) The computer network of claim 6 wherein the plurality of managed network elements include derived managed network elements.

26. (Previously Presented) The computer network of claim 6 wherein the plurality of managed network elements include application managed network elements.

27. (Previously Presented) The computer network of claim 6 wherein the plurality of managed network elements include resource managed network elements.

28. (Previously Presented) The computer network of claim 6 wherein the plurality of managed network elements include reference managed network elements.

29. (Previously Presented) The computer network of claim 6 wherein the plurality of managed network elements include external interface managed network elements.

30. (Withdrawn) The manager engine computer of claim 7 wherein the managed elements of the network include base managed elements.

31. (Withdrawn) The manager engine computer of claim 30 wherein the managed elements of the network include derived managed elements.

32. (Withdrawn) The manager engine computer of claim 31 wherein the managed elements of the network include application managed elements.

33. (Withdrawn) The manager engine computer of claim 32 wherein the managed elements of the network include resource managed elements.

34. (Withdrawn) The manager engine computer of claim 33 wherein the managed elements of the network include reference managed elements.

35. (Withdrawn) The manager engine computer of claim 34 wherein the managed elements of the network include external interface managed elements.

36. (Withdrawn) A computer network, the computer network including a plurality of managed sites, each of the plurality of managed sites including a plurality of manager engine computers, each one manager engine computer of the plurality of manager engine computers coupled to a corresponding plurality of managed nodes, the manager engine computer comprising:

a. a management software component being capable of retrieving and storing data representative of network state information, the network state information comprising a subset of a plurality of managed network elements, wherein at least one of the subset of the plurality of managed network elements represents at least one of the corresponding plurality of managed nodes; and

b. a managed element assignment manager software component, the managed element assignment manager software component facilitating assignment of the managed network elements among the plurality of manager engine computers using a load balancing formula, the load balancing algorithm incorporating load balancing parameters.

37. (Withdrawn) The computer network of claim 36 wherein the load balancing parameters include a Mean Engine Load parameter.

38. (Withdrawn) The computer network of claim 36 wherein the load balancing parameters include an Average Engine Load parameter.

39. (Withdrawn) The computer network of claim 36 wherein the load balancing parameters include a Low Tide Mark parameter.

40. (Withdrawn) The computer network of claim 36 wherein the load balancing parameters include a High Tide Mark parameter.



41. (Withdrawn) The computer network of claim 36 wherein the load balancing parameters include a Low Water Mark parameter.

42. (Withdrawn) The computer network of claim 36 wherein the load balancing parameters include a High Water Mark parameter.

43. (Withdrawn) The computer network of claim 36 wherein the manager engine computer further comprises a replication manager software component, the replication manager software component facilitating synchronization among the plurality of manager engine of the stored data representative of network state information.

44. (Withdrawn) The computer network of claim 36 wherein the manager engine computer further comprises an audit software component, the audit software component being capable of storing in a log file data representative of audit information about applications running on the corresponding plurality of managed nodes.

45. (Withdrawn) The computer network of claim 44 wherein the audit software component comprises an audit information producer component and an audit information consumer component, the audit information producer component retrieving stored data in the log file and placing it in a shared buffer comprised of two queues, the audit information consumer component retrieving data from the shared buffer in response to requests communicated from a client, wherein the audit information consumer component operates in a manner that is asynchronous relative to the operation of the audit information producer component.

46. (Withdrawn) The computer network of claim 45 wherein the audit information consumer component continuously alternates among retrieving data from a first of the two queues while the audit information producer component places log file data in a second of the two queues and retrieving data from the second of the two queues while the audit information producer component placed log file data in the first of the two queues.

47. (Withdrawn) The computer network of claim 44 wherein the manager engine computer further comprises an engine to engine software component, the engine to engine software component facilitating the exchange of messages among the plurality of manager engine computers.

48. (Withdrawn) The computer network of claim 47 wherein each one message of the messages includes data representative of the destination engine of the message.

49. (Withdrawn) The computer network of claim 47 wherein each one message of the messages includes data representative of the source engine of the message.

50. (Withdrawn) The computer network of claim 47 wherein each one message of the messages includes data representative of the date the message was issued.

51. (Withdrawn) The computer network of claim 47 wherein the manager engine computer further comprises an election manager software component, the election manager software component facilitating the designation of one of the plurality of manager engine computers as a master engine computer.

52. (Withdrawn) The computer network of claim 51 wherein the election manager software component designates the master engine computer by (a) generating a first random number identifier; (b) comparing the first random number identifier to other random number identifiers generated by other of the plurality of manager engine computers; and (c) self-assigning a master designation in the event the first random number identifier is greater than the other random number identifiers.

53. (Withdrawn) The computer network of claim 51 wherein the manager engine computer further comprises an engine monitoring manager component, the engine monitoring manager component facilitating the provision of heartbeat messages to other of the plurality of manager engine computers to signal the availability of the manager engine computer.

54. (Withdrawn) The computer network of claim 53 wherein the engine monitoring manager component is also capable of detecting heartbeat messages issued by other of the plurality of manager engine computers to determine the availability of the other of the plurality of manager engine computers.

55. (Withdrawn) The computer network of claim 54 wherein the engine monitoring manager component is also capable of notifying the other of the plurality of manager engine computers of an engine failure among the other of the plurality of manager engine computers.

56. (Withdrawn) The computer network of claim 53 wherein the manager engine computer further comprises a message switch software component, the message switch software component facilitating the exchange of messages among software components in the manager engine computer.

57. (Withdrawn) The computer network of claim 56 wherein the message switch software component comprises a routing table, a primary message storage list and a client information component.

58. (Withdrawn) The computer network of claim 57 wherein the message switch software component comprises a routing table, a primary message storage list and a client information component.

59. (Withdrawn) The computer network of claim 57 wherein the messages include properties and corresponding values, the properties and corresponding values including a priority property and corresponding numerical priority.

60. (Withdrawn) The computer network of claim 59 wherein the properties and corresponding values include a source property and corresponding source string.

61. (Withdrawn) The computer network of claim 59 wherein the properties and corresponding values include a destination property and corresponding destination string. elements include external interface managed network elements.

62. (Currently Amended) A manager engine computer coupled to at least one client and a plurality of managed nodes, the plurality of managed nodes located in one of a plurality of managed sites comprising a network, the manager engine computer communicating with the plurality of managed nodes and storing data representative of network state information, the network state information being organized as a series of relationships among managed elements of the network, the manager engine computer comprising:

a. a management software component, the management software component being capable of retrieving, analyzing and storing the data representative of network state information organized as a series of relationships among managed elements of the network, and

b. a client interface software component, the client interface software component facilitating retrieval from the manager engine computer by the client of the stored data representative of network state information organized as a series of relationships among managed elements of the network,

wherein the plurality of managed elements comprise at least one physical element and at least one of ~~an~~ software application, and a software subroutine, ~~a service, and data.~~

63. (Previously Presented) The manager engine computer of claim 62 wherein the management software component further comprises a root cause evaluation component, the root cause evaluation component facilitating detection of network problems using dependencies incorporated into the series of relationships among managed elements of the network.

64. (Previously Presented) The manager engine computer of claim 63 wherein the management software component further comprises a policy enforcement component, the policy enforcement component facilitating enforcement of network policies in response to a state change in a corresponding one of the managed elements of the network.

65. (Previously Presented) The manager engine computer of claim 64 wherein the managed elements of the network include base managed elements.

66. (Previously Presented) The manager engine computer of claim 65 wherein the base managed elements include data representing an SQL server in the network.

67. (Previously Presented) The manager engine computer of claim 64 wherein the managed elements of the network include derived managed elements.

68. (Previously Presented) The manager engine computer of claim 64 wherein the managed elements of the network include application managed elements.

69. (Previously Presented) The manager engine computer of claim 68 wherein the application managed elements include data representing a Customer Information Tracking System in the network.

70. (Previously Presented) The manager engine computer of claim 64 wherein the managed elements of the network include resource managed elements.

71. (Previously Presented) The manager engine computer of claim 70 wherein the resource managed elements include data representing a group of SQL servers in the network.

72. (Previously Presented) The manager engine computer of claim 64 wherein the managed elements of the network include reference managed elements.

73. (Previously Presented) The manager engine computer of claim 72 wherein the reference managed elements include data representing a root cause isolation.

74. (Previously Presented) The manager engine computer of claim 64 wherein the managed elements of the network include external interface managed elements.

75. (Previously Presented) The manager engine computer of claim 74 wherein the external interface managed elements include data representing a web application in the network.

76. (Withdrawn) A manager engine computer coupled to at least one client and a plurality of managed nodes, the plurality of managed nodes located in one of a plurality of managed sites comprising a network, the manager engine computer communicating with the plurality of managed nodes and storing data representative of network state information, the network state information being organized as a series of relationships among managed elements of the network, the manager engine computer comprising:

- a. a management software component, the management software component being capable of retrieving, analyzing and storing the data representative of network state information organized as a series of relationships among managed elements of the network,
- b. a client interface software component, the client interface software component facilitating retrieval from the manager engine computer by the client of the stored data representative of network state information organized as a series of relationships among managed elements of the network; and
- c. a relational database storing the network state information, the relational database comprising:
  - i. a managed element table, the managed element table comprising data about managed elements of the network;
  - ii. a managed element relationship table, the managed element relationship table comprising data about possible relationships among the managed elements of the network; and
  - iii. a managed element type table, the managed element type table comprising data representative of type information for the managed elements of the network.

77. (Withdrawn) The manager engine computer of claim 76 wherein the management software component further comprises a root cause evaluation component, the root cause evaluation component facilitating detection of network problems using dependencies incorporated into the series of relationships among managed elements of the network.

78. (Withdrawn) The manager engine computer of claim 77 wherein the management software component further comprises a policy enforcement component, the policy enforcement component facilitating enforcement of network policies in response to a state change in a corresponding one of the managed elements of the network.

79. (Withdrawn) The manager engine computer of claim 78 wherein the managed elements of the network include base managed elements.

80. (Withdrawn) The manager engine computer of claim 79 wherein the base managed elements include data representing an SQL server in the network.

81. (Withdrawn) The manager engine computer of claim 78 wherein the managed elements of the network include derived managed elements.

82. (Withdrawn) The manager engine computer of claim 78 wherein the managed elements of the network include application managed elements.

83. (Withdrawn) The manager engine computer of claim 82 wherein the application managed elements include data representing a Customer Information Tracking System in the network.

84. (Withdrawn) The manager engine computer of claim 78 wherein the managed elements of the network include resource managed elements.

85. (Withdrawn) The manager engine computer of claim 84 wherein the resource managed elements include data representing a group of SQL servers in the network.

86. (Withdrawn) The manager engine computer of claim 78 wherein the managed elements of the network include reference managed elements.

87. (Withdrawn) The manager engine computer of claim 86 wherein the reference managed elements include data representing a root cause isolation.

88. (Withdrawn) The manager engine computer of claim 78 wherein the managed elements of the network include external interface managed elements.

89. (Withdrawn) The manager engine computer of claim 88 wherein the external interface managed elements include data representing a web application in the network.

90. (Currently Amended) A method of managing a computer network, the computer network including a plurality of managed sites, comprising:

retrieving and storing data representative of network state information using at least one manager engine computer coupled to a plurality of managed nodes, the at least one

manager engine computer including a management software component, the management software component being capable of retrieving and storing data representative of network system state information, the network system state information comprising relationships among a plurality of managed network elements, wherein at least one of the plurality of managed network elements corresponds to one of the plurality of managed nodes, and wherein the plurality of managed network elements comprise at least one physical element and at least one of ~~an~~ software application, and a software subroutine, ~~a service, and data~~; and

retrieving the data representative network system state information using at least one client computer coupled to the at least one manager engine computer, the at least one client computer including a data retrieval software component, the data retrieval software component being capable of retrieving the data representative of network system state information from the at least one manager engine computer and of presenting the data representative of network system state information to a user.

91. (Previously Presented) The method of claim 90, wherein the data representative of network system state information is stored in a database on the at least one manager engine computer, the data base comprising data representing information about the plurality of managed network elements, the information about the plurality of network elements including, for each element of the plurality of managed network elements, an element type, possible parents of the element, a corresponding assigned manager engine computer for the element, a corresponding command list, if any, for the element, any security restrictions for the managed element and information relating the element to others of the plurality of managed network elements.

92. (Previously Presented) The method of claim 90, wherein the data retrieval software component includes a snap-in application.

93. (Previously Presented) The method of claim 90, wherein the relationships among the plurality of managed network elements include one-way relationships.

94. (Previously Presented) The method of claim 90, wherein the relationships among the plurality of managed network elements include two way relationships.

95. (Previously Presented) The method of claim 90, further comprising presenting the data representative of network state information to the user, wherein the data retrieval software component includes a user interface software component, the user interface software

component adapted to present the data representative of network state information to the user by representing each of the plurality of managed network elements with a corresponding icon and by representing the relationships among the plurality of managed network elements with corresponding connectors visibly connecting icons.

96. (Previously Presented) The method of claim 95, wherein the user interface software component features drill down capability.

97. (Previously Presented) The method of claim 95, wherein the icons convey property information.

98. (Previously Presented) The method of claim 95, wherein the icons include actions icons which facilitate user initiation of actions.

99. (Previously Presented) The method of claim 95, wherein the plurality of managed network elements include base managed network elements.

100. (Previously Presented) The method of claim 95, wherein the plurality of managed network elements include derived managed network elements.

101. (Previously Presented) The method of claim 95, wherein the plurality of managed network elements include application managed network elements.

102. (Previously Presented) The method of claim 95, wherein the plurality of managed network elements include resource managed network elements.

103. (Previously Presented) The method of claim 95, wherein the plurality of managed network elements include reference managed network elements.

104. (Previously Presented) The method of claim 95, wherein the plurality of managed network elements include external interface managed network elements.

105. (Currently Amended) A method of managing a computer network comprising a manager engine computer coupled to at least one client and a plurality of managed nodes, the plurality of managed nodes located in one of a plurality of managed sites comprised in the network, the manager engine computer communicating with the plurality of managed nodes and storing data representative of network state information, the network state information being organized as a series of relationships among managed elements of the network, the method comprising:

retrieving, analyzing, and storing the data representative of the network state information using a management software component, the management software component



being capable of retrieving, analyzing and storing the data representative of network state information organized as a series of relationships among managed elements of the network;  
and

facilitating retrieval of the stored data representative of network state information using a client interface software component, the client interface software component facilitating retrieval from the manager engine computer by the client of the stored data representative of network state information organized as a series of relationships among managed elements of the network , and

wherein the plurality of managed network elements comprise at least one physical element and at least one of ~~an~~ software application, and a software subroutine, ~~a service, and data.~~

106. (Previously Presented) The method of claim 105, further comprising facilitating detection of network problems, wherein the management software component further comprises a root cause evaluation component, the root cause evaluation component facilitating detection of network problems using dependencies incorporated into the series of relationships among managed elements of the network.

107. (Previously Presented) The method of claim 106, further comprising facilitating enforcement of network policies, wherein the management software component further comprises a policy enforcement component, the policy enforcement component facilitating enforcement of network policies in response to a state change in a corresponding one of the managed elements of the network.

108. (Previously Presented) The method of claim 107, wherein the managed elements of the network include base managed elements.

109. (Previously Presented) The method of claim 108, wherein the base managed elements include data representing an SQL server in the network.

110. (Previously Presented) The method of claim 107, wherein the managed elements of the network include derived managed elements.

111. (Previously Presented) The method of claim 107, wherein the managed elements of the network include application managed elements.

112. (Previously Presented) The method of claim 111, wherein the application managed elements include data representing a Customer Information Tracking System in the network.

113. (Previously Presented) The method of claim 107, wherein the managed elements of the network include resource managed elements.

114. (Previously Presented) The method of claim 113, wherein the resource managed elements include data representing a group of SQL servers in the network.

115. (Previously Presented) The method of claim 107, wherein the managed elements of the network include reference managed elements.

116. (Previously Presented) The method of claim 115, wherein the reference managed elements include data representing a root cause isolation.

117. (Previously Presented) The method of claim 107, wherein the managed elements of the network include external interface managed elements.

118. (Previously Presented) The method of claim 117, wherein the external interface managed elements include data representing a web application in the network.

119. (Withdrawn) A method of managing a computer network including a plurality of managed sites, comprising:

retrieving and storing data representative of network system state information using at least one manager engine computer coupled to a plurality of managed nodes, the at least one manager engine computer including a management software component, the management software component being capable of retrieving and storing data representative of network system state information, the network system state information comprising relationships among a plurality of managed network elements, wherein at least one of the plurality of managed network elements corresponds to one of the plurality of managed nodes;

storing data representative of audit information about applications running on the plurality of nodes, wherein the at least one manager engine computer comprises an audit software component, the audit software component being capable of storing in a log file data representative of audit information about applications running on the plurality of managed nodes; and

retrieving the data representative of network system state information and audit information using at least one client computer coupled to the at least one manager engine

computer, the at least one client computer including a data retrieval software component, the data retrieval software component being capable of retrieving the data representative of network system state information and audit information from the at least one manager engine computer and of presenting the data representative of network system state information and audit information to a user.

120. (Withdrawn) The method of claim 119, further comprising:

retrieving stored data in the log file and placing it in a shared buffer comprised of two queues wherein the audit software component further includes an audit information producer component, the audit information producer component adapted to retrieve stored data in the log file and place it in a shared buffer comprised of two queues; and

retrieving data from the shared buffer in response to requests communicated from the data retrieval software component wherein the audit software component further comprises an audit information consumer component adapted to retrieve data from the shared buffer in response to requests communicated from the data retrieval software component on the at least one client computer,

wherein the audit information consumer component operates in a manner that is asynchronous relative to operation of the audit information producer component.

121. (Withdrawn) The method of claim 120, further comprising operating the audit information consumer component by continuously alternating among retrieving data from a first of the two queues while the audit information producer component places log file data in the a second of the two queues, and retrieving data from the second of the two queues while the audit information producer component places log file data in the first of the two queues.